

These potential exposure pathways at Gulfco Marine Maintenance include soil, sediment, groundwater, surface water, seafood, and air. To determine whether people are exposed to site-related contaminants, environmental and human components leading to human exposure must be evaluated. This analysis consists of evaluating the five elements of an exposure pathway:

- a source of contamination,
- transport through an environmental medium,
- a point of exposure,
- a route through which the contaminant can enter the body, and
- an exposed population.

Exposure pathways can be complete, potential, or eliminated. For a person to be exposed to a contaminant, the exposure pathway must be complete. An exposure pathway is considered complete when all five elements in the pathway are present and exposure has occurred, is occurring, or will occur in the future. An eliminated pathway is missing one or more elements and will never be completed. Having a cap over the contaminants, which are VOCs and SVOCs, will prevent leachate from driving the contamination to the surface water body.

Drainage for the southern part of the property is toward the Intracoastal Waterway. In general, surface water can migrate in all directions within contiguous surface water bodies since these surface water bodies are tidally influenced. Zone A groundwater is in direct contact with the Intercoastal Waterway. Many COC Zone A groundwater concentrations greatly increase the Texas Risk Reduction Program Protective Concentration Limits (TRRP PCLs) for contact recreation with surface water. For example: 1,2-Dichloroethane has a reported Zone A groundwater concentration of 292 mg/L and a TRRP PCL of 0.196 mg/L. 1,1,1-Trichloroethane has a reported Zone A groundwater concentration of 234 mg/L and a TRRP PCL of 47.2 mg/L. The reported concentration for 1,2-Dichloroethane is more than 3 orders of magnitude higher than the TRRP PCL leading to a risk that is in the 10^{-2} and the reported concentration for 1,1,1-Trichloroethane is almost five times higher than the TRRP PCL. If these COCs with high concentrations in the plume migrate to the Intercoastal Waterway, the populations in contact with the water will not be protected. The existence and maintenance of the cap will eliminate a point of exposure. This will eliminate many of the routes of exposure specifically incidental ingestion and dermal contact for recreational swimmers as well as ingestion of seafood by subsistence fishermen and recreational fishermen. If the cap were removed or not maintained then incidental ingestion and dermal contact for recreational swimmers as well as ingestion of seafood by subsistence fishermen and recreational fishermen would exist leading to increased carcinogenic and non-carcinogenic risk. This remedy will ensure protectiveness of human health against carcinogenic and noncarcinogenic endpoints.

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